Claims

[c1]   A method of controlling distribution and use of a digital
file, the method comprising:
defining a database of known file hash signatures;
determining a hash signature for a digital file; and
comparing the said signature with signatures contained
in said database to determine if there is a match.

[c2]   [Claim Reference]A method according to claim 1, wherein
a match of signatures between the compared file and
said database results in an action affecting the said
compared file.

[c3]   [Claim Reference]A method according to claim 1, wherein
the result of a non-matching signature between the
compared file and said database results in an action af-
fecting the said compared file.

[c4]   [Claim Reference]A method according to claim 1, wherein
the result of a non-matching signature between the
compared file and said database results in an action af-
fecting the said database.

[c5]   [Claim Reference]A method according to claim 1, wherein
a match of signatures between the compared file and

said database results in an action affecting the said database.

[c6]   [Claim Reference]A method according to claim 1, wherein a match of signatures between the compared file and said database results in an alert or notification to a user of a computer system.

[c7]   [Claim Reference]A method according to claim 6, wherein the said computer system is connected via an electronic link to a remote central computer.

[c8]   [Claim Reference]A method according to claim 6, wherein the said computer system is connected via a peer to peer network.

[c9]   [Claim Reference]A method according to claim 6, wherein the said computer system is not connected to a network.

[c10]   [Claim Reference]A method according to claim 6, wherein the said computer system is connected to a wireless network.

[c11]   [Claim Reference]A method according to claim 1, wherein the said database is updated via an electronic link between a computer hosting the database, where the comparing of the file is performed, and a remote central computer where a second master database is stored.

[c12]   [Claim Reference]A method according to claim 11, wherein said second master database can be modified via a bidirectional relationship with said database.

[c13]   [Claim Reference]A method according to claim 1, wherein said step of determining a signature for the said file and comparing that signature comprises deriving a signature of the file and comparing the derived signature with signatures in the said database.

[c14]   [Claim Reference]A method according to claim 1, wherein said signature is derived using a hash computation.

[c15]   Apparatus for determining and comparing the hash signature of a file, the apparatus comprising:
a memory storing a database of known file signatures; and
a data processor arranged to compare said file signatures to determine whether or not the signature matches one of the signatures contained in said database.

[c16]   A computer memory encoded with executable instructions representing a computer program for causing computer system to:
maintain a database of known file signatures; and
determine whether or not a file has a signature matching one of the signatures contained in said database.

[c17] A network firewall connected through one or more net-
work interfaces to one or more networks, each of the
networks connected to one or more clients, the firewall
having one or more memories and one or more central
processing units (CPUs) and further comprising:
one or more applications executed by one or more of the
CPUs, each application using one or more sockets con-
nected to the networks to communicate over the net-
works; and
one or more rule sets containing one or more rules; and
one or more databases.

[c18] [Claim Reference]A firewall according to claim 17,
wherein one said database contains digital file finger-
prints.

[c19] [Claim Reference]A firewall according to claim 17,
wherein one said application compares digital file finger-
prints contained in a said database with a digital file fin-
gerprint in transit on said network.

[c20] [Claim Reference]A firewall, as in claim 17, wherein the
rule set contains a method to identify specific files in
transit by their unique digital fingerprint.

[c21] [Claim Reference]A firewall, as in claim 17, wherein the
specific data files are one or more of the following types:

a video file, an audio file, a picture file, a video and audio file, a digital document or other digital file type containing digital data.

[c22] [Claim Reference]A method according to claim 1, wherein the said file is a digital audio file.

[c23] [Claim Reference]A method according to claim 1, wherein the said file is a digital video file.

[c24] [Claim Reference]A method according to claim 1, wherein the said file is a digital text document file.

[c25] [Claim Reference]A method according to claim 1, wherein the said file is any digital file containing copyrighted content.

[c26] [Claim Reference]A method according to claim 1, wherein the said file is stored on a PDA (Personal Digital Assistant).

[c27] [Claim Reference]A method according to claim 1, wherein the said file is stored on a cellular telephone.

[c28] [Claim Reference]A method according to claim 1, wherein the said file is stored on a digital camera.

[c29] [Claim Reference]A method according to claim 1, wherein the said file is stored on a digital storage device.

[c30] [Claim Reference]A method according to claim 1, wherein the said file is compared with signatures in said database when the file is executed.

[c31] [Claim Reference]A method according to claim 1, wherein the said file is compared with signatures in said database by comparing every file stored on a computer system.

[c32] [Claim Reference]A method according to claim 1, wherein the said file is compared with signatures in said database at the time the said file is first received on a computer system.

[c33] [Claim Reference]A method according to claim 6, wherein the said user is alerted with an option of purchasing copyrighted content equivalent to content found in a match.

[c34] [Claim Reference]A method according to claim 33, wherein the said content may be content already contained on said users computer system through a process of re-encoding said content to a new secure format.

[c35] [Claim Reference]A method according to claim 1, wherein the said method is executed on a computer system.

[c36] [Claim Reference]A method according to claim 1, wherein the said method is executed on a PDA (Personal Digital

Assistant).

[c37]   [Claim Reference]A method according to claim 1, wherein the said method is executed on cellular telephone.

[c38]   [Claim Reference]A method according to claim 1, wherein the said method is executed on a digital camera.

[c39]   [Claim Reference]A method according to claim 1, wherein the said method is executed on a network appliance.

[c40]   [Claim Reference]A method according to claim 1, wherein the said method is executed on a microchip technology.

[c41]   [Claim Reference]A method according to claim 1, wherein a resulting match in said compare between file signature and file signatures in said database results in a network action or event.

[c42]   [Claim Reference]A method according to claim 1, wherein a resulting match in said compare between file signature and file signatures in said database results in a local computer system action or event.

[c43]   [Claim Reference]A method according to claim 1, wherein a resulting non-match in said compare between file signature and file signatures in said database results in a network action or event.

[c44] [Claim Reference]A method according to claim 1, wherein a resulting non-match in said compare between file signature and file signatures in said database results in a local computer system action or event.

[c45] [Claim Reference]A method according to claim 1, wherein a resulting match in said compare results in the user of a computer system being presented with an option to purchase said matching content.

[c46] [Claim Reference]A method according to claim 1, wherein a resulting match in said compare results in the user of a computer system being presented with an option to delete said matching content.

[c47] [Claim Reference]A method according to claim 45, wherein the said file is a digital audio file.

[c48] [Claim Reference]A method according to claim 45, wherein the said file is a digital video file.

[c49] [Claim Reference]A method according to claim 45, wherein the said file is a digital text document file.

[c50] [Claim Reference]A method according to claim 45, wherein the said file is any digital file containing copyrighted content.

[c51] [Claim Reference]A method according to claim 46,

wherein the said file is a digital audio file.

[c52] [Claim Reference]A method according to claim 46, wherein the said file is a digital video file.

[c53] [Claim Reference]A method according to claim 46, wherein the said file is a digital text document file.

[c54] [Claim Reference]A method according to claim 46, wherein the said file is any digital file containing copy-righted content.

[c55] [Claim Reference]A method according to claim 45, wherein the said file is a digital file with file type .ppt, .xls, or .doc.

[c56] [Claim Reference]A method according to claim 46, wherein the said file is a digital file with file type .ppt, .xls, or .doc.

[c57] [Claim Reference]A method according to claim 1, wherein the said method is executed on a digital audio player.

[c58] [Claim Reference]A method according to claim 1, wherein the said file is a digital audio file and is executed for a period of time on a computer system before an action or event occurs.

[c59] [Claim Reference]A method according to claim 1, wherein

the result of a match results in the user being presented with several options.

[c60] [Claim Reference]A method according to claim 59, wherein one said option is to purchase said matching content.

[c61] [Claim Reference]A method according to claim 60, wherein said option is communicated through an alert.

[c62] [Claim Reference]A method according to claim 60, wherein said option is communicated through a web page.

[c63] [Claim Reference]A method according to claim 60, wherein said option is performed by re-encoding said file as a different file type directly on the said computer system.

[c64] [Claim Reference]A method according to claim 63, wherein said re-encoded file is of file type AAC.

[c65] [Claim Reference]A method according to claim 63, wherein said re-encoded file is of the type MP3.

[c66] [Claim Reference]A method according to claim 63, wherein said re-encoded file is of the type MP4.

[c67] [Claim Reference]A method according to claim 63,

wherein said re-encoded file is of the type AIFF.

[c68] [Claim Reference]A method according to claim 63, wherein said re-encoded file is of the type MPEG.

[c69] [Claim Reference]A method according to claim 59, wherein one said option is to delete said matching content.

[c70] [Claim Reference]A method according to claim 59, wherein one said option is to lease said matching content for a period of time.

[c71] [Claim Reference]A method according to claim 59, wherein one said option is to take an online class.

[c72] [Claim Reference]A method according to claim 59, wherein one said option is to request use of a file.

[c73] [Claim Reference]A method according to claim 72, wherein said file is of the type .doc.

[c74] [Claim Reference]A method according to claim 72, wherein said file is of the type .xls.

[c75] [Claim Reference]A method according to claim 72, wherein said file is of the type .ppt.

[c76] [Claim Reference]A method according to claim 59, wherein one said option is to never allow known match-

ing content to be received or executed.

[c77] [Claim Reference]A method according to claim 59, wherein one said option is to delete all matching content.

[c78] [Claim Reference]A method according to claim 1, wherein the said database containing hash signatures is updated via an electronic link.

[c79] [Claim Reference]A method according to claim 1, wherein the said database containing hash signatures is updated via a dynamic update engine.

[c80] [Claim Reference]A method according to claim 79, wherein said dynamic update engine is comprised of the following:
an application run on a computer system; and
a search routine; and
a connection to a master database.

[c81] [Claim Reference]A method according to claim 80, wherein said application is programmed to search for digital content available for transfer on an electronic network link.

[c82] [Claim Reference]A method according to claim 80, wherein said application is programmed to interact and

pass commands to and from the said search routine.

[c83] [Claim Reference]A method according to claim 81, wherein said digital content is of file type AAC.

[c84] [Claim Reference]A method according to claim 81, wherein said digital content is of the file type MP3.

[c85] [Claim Reference]A method according to claim 81, wherein said digital content is of the file type MP4.

[c86] [Claim Reference]A method according to claim 81, wherein said digital content is of the file type AIFF.

[c87] [Claim Reference]A method according to claim 81, wherein said digital content is of the file type MPEG.

[c88] [Claim Reference]A method according to claim 81, wherein said digital content is of the type .doc.

[c89] [Claim Reference]A method according to claim 81, wherein said digital content is of the type .xls.

[c90] [Claim Reference]A method according to claim 81, wherein said file is of the type .ppt.

[c91] [Claim Reference]A method according to claim 80, wherein said master database contains a relational list of content based on matching probability.

[c92] [Claim Reference]A method according to claim 80, wherein said master database communicates with other online databases to communicate relational changes.

[c93] [Claim Reference]A method according to claim 1, wherein said database communicates with an online master database via an electronic link.

[c94] [Claim Reference]A method according to claim 81, wherein the said digital content is of the type .JPEG or .JPG.

[c95] [Claim Reference]A method according to claim 81, wherein the said digital content is of the type .GIF.

[c96] [Claim Reference]A method according to claim 81, wherein the said digital content is of the type .TIFF or .TIF.

[c97] [Claim Reference]A method according to claim 1, wherein the said digital content is of the type .JPEG or .JPG.

[c98] [Claim Reference]A method according to claim 1, wherein the said digital content is of the type .GIF.

[c99] [Claim Reference]A method according to claim 1, wherein the said digital content is of the type .TIFF or .TIF.

[c100] [Claim Reference]A method according to claim 45,

wherein the said digital content is of the type .JPEG or .JPG.

[c101] [Claim Reference]A method according to claim 45, wherein the said digital content is of the type .GIF.

[c102] [Claim Reference]A method according to claim 45, wherein the said digital content is of the type .TIFF or .TIF.

[c103] [Claim Reference]A method according to claim 46, wherein the said digital content is of the type .JPEG or .JPG.

[c104] [Claim Reference]A method according to claim 46, wherein the said digital content is of the type .GIF.

[c105] [Claim Reference]A method according to claim 46, wherein the said digital content is of the type .TIFF or .TIF.

[c106] [Claim Reference]A method according to claim 72, wherein the said digital content is of the type .JPEG or .JPG.

[c107] [Claim Reference]A method according to claim 72, wherein the said digital content is of the type .GIF.

[c108] [Claim Reference]A method according to claim 72,

wherein the said digital content is of the type .TIFF or .TIF.

[c109] [Claim Reference]A method according to claim 72, wherein the said file is a digital audio file.

[c110] [Claim Reference]A method according to claim 72, wherein the said file is a digital video file.